

check in the amount of \$55.00 for payment of the fee associated with this Petition, as set forth in 37 C.F.R. § 1.17, and authorization for the Commissioner to charge any additional fee or to credit any overpayment in connection with this Petition to Deposit Account No. 50-0836.

IN THE CLAIMS:

Please amend the claims such that they read as follows:

1. (Twice Amended) A method for obtaining apomictic plants from sexual plants comprising:

(a) obtaining at least two sets of delineated lines from a plant species or group of related plant species that are differentiated by their flowering responses to various photoperiods and by their start times and durations of female developmental stages relative to development of nongametophytic ovule and ovary tissue; and

(b) hybridizing said sets of delineated lines, recovering seed from the hybridization, sowing said seed, and selecting hybrid lines that contain genetic material of each said set of delineated lines such that asynchronous floral development, and therefore apomixis, is conferred.

17. (Twice Amended) A method for obtaining apomictic plants from sexual plants comprising:

(a) identifying divergence in flowering responses to various photoperiods within a plant species or group of related plant species;

(b) obtaining two sets of lines of said plant species or group of related plant species that are differentiated by their flowering responses to various photoperiods;

(c) identifying within and between said sets of lines divergence in start times and durations of female developmental stages relative to development of nongametophytic ovule and ovary tissues;

(d) obtaining two sets of delineated lines of said species or group of related species that are differentiated by their flowering responses to various photoperiods and by their start times and durations of female developmental stages relative to development of nongametophytic ovule and ovary tissues; and

(e) producing hybrid lines that contain genetic material of each said set of delineated lines such that asynchronous floral development, and therefore apomixis, is conferred by hybridizing said two sets of delineated lines, recovering seed from the hybridization, sowing said seed, and selecting said hybrid lines.

18. (Twice Amended) A method for obtaining aposporic, diplosporic, or polyembryonic plants from sexual monocotyledonous or dicotyledonous plants comprising:

(a) identifying divergence in flowering responses to various photoperiods within a plant species or group of related plant species;

(b) obtaining two sets of lines of said plant species or group of related plant species that are differentiated by their flowering responses to various photoperiods;

(c) identifying within and between said sets of lines divergence in start times and durations of female developmental stages selected from the group consisting of archesporium formation, megasporogenesis, megagametogenesis, and early embryony relative to the development of nongametophytic ovule and ovary tissues selected from the group consisting of nucellus, integument, pericarp, hypanthium, and pistil wall;

(d) obtaining two sets of delineated lines of said species or group of related species that are differentiated by their

(i) flowering responses to various photoperiods such that divergence occurs within a member or across more than one member selected from the group consisting of short-day plants, long-day plants, dual-day-length plants, intermediate-day-length plants, ambiphotoperiodic plants, and day-neutral plants and

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(ii) start times and durations of female developmental stages selected from the group consisting of archespore formation, megasporogenesis, megagametogenesis, and early embryony relative to the development of nongametophytic ovule and ovary tissues selected from the group consisting of nucellus, integument, pericarp, hypanthium, and pistil wall such that divergence occurs within one member or spans more than one member of such female developmental stages;

(e) producing by sexual reproduction or somatic cell hybridization polyploid, triploid, diploid, or aneuploid lines such that apomixis is expressed.

Please add the following new claim to the application:

Sub 14. A method for producing apomictic plants from two or more sexual plants of the same or related species comprising:

(a) obtaining two sexual lines whose female reproductive phenotypes differ such that under similar environmental conditions asynchrony in female developmental schedules between the two lines occurs; and

(b) hybridizing the two sexual lines by plant breeding or somatic cell hybridization to induce apomixis, obtaining progeny from such hybridizing of the two sexual lines, and selecting apomictic plants from among said progeny.